Solar intelligent vertical control system

Overview

Renewable energy systems, such as photovoltaic (PV) systems, have become increasingly significant in response to the pressing concerns of climate change and the imperative to mitigate carbon emissions.

What is intelligent solar tracking controller?

The designed intelligent solar tracking controller was implemented based on a field-programmable gate array (FPGA). The designed control system was tested and evaluated using both experimental and simulation and it allowed simpler, faster, and precise control to the solar tracking system.

Can artificial intelligence be used in solar tracking control systems?

Artificial Intelligence is widely used in solar applications. Adaptive Neural Fuzzy Inference System (ANFIS) principle is one of the intelligent techniques that is sufficient to be used in control systems. This paper proposes two new efficient intelligent solar tracking control systems based on ANFIS principle.

Can PV cells reduce energy consumption in IoT-enabled irrigation control and monitoring systems?

This study aims to conduct a feasibility study on using PV cells to reduce energy consumption in IoT-enabled irrigation control and monitoring systems. In the experiment, an intelligent water irrigation system was designed for data collection including energy harvested from PV, climate conditions, and water quality.

Can artificial intelligence improve solar energy production?

The utilization of artificial intelligence (AI) is crucial for improving the energy generation of PV systems under various climatic circumstances, as conventional controllers do not effectively optimize the energy output of solar systems. Nevertheless, the performance of PV systems can be influenced by fluctuations in meteorological conditions.

Can IoT-enabled irrigation control and monitoring systems reduce energy consumption?

Vertical farming can be made more sustainable by integrating Internet-of-Things (IoT) and solar photovoltaic (PV) as an intelligent system. This study aims to conduct a feasibility study on using PV cells to reduce energy consumption in IoT-enabled irrigation control and monitoring systems.

Are intelligent solar tracking controllers based on fuzzy logic?

Several intelligent solar tracking controllers based on fuzzy logic principle were proposed and implemented globally. The variation from one proposed model to another is mainly in the adopted type of fuzzy logic, the used architecture, and the employed input and output variables.

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